

CLAIMS

I/We claim:

- [c1] 1. A method of reporting T-wave alternan values, comprising:
obtaining T-wave alternan values corresponding to alternans at relative
time intervals of a plurality of T-wave segments obtained from a
physiological signal representative of a patient's heartbeat; and
displaying a representation of a plurality of the T-wave alternan values at
the relative time intervals of the T-wave segments.
- [c2] 2. The method of claim 1 wherein displaying a representation of the T-
wave alternan values comprises generating a graphic display related to the
amplitude of the T-wave alternan values at the relative time intervals for selected
heart rates.
- [c3] 3. The method of claim 2 wherein generating a graphic display related
to the amplitude of the T-wave alternan values at the relative time intervals
comprises generating a plot of the T-wave alternan values versus T-wave
segment time.
- [c4] 4. The method of claim 2 wherein generating a graphic display related
to the amplitude of the T-wave alternan values at the relative time intervals
comprises color coding relative amplitudes of T-wave alternan values and
displaying colors corresponding to the relative amplitudes of the T-wave alternan
values at the relative time intervals.

- [c5] 5. The method of claim 4 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.
- [c6] 6. The method of claim 4 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.
- [c7] 7. The method of claim 2 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.
- [c8] 8. The method of claim 7 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.
- [c9] 9. The method of claim 1, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.
- [c10] 10. The method of claim 1 wherein the physiological signal is from a lead and displaying a representation of a plurality of the T-wave alternan values comprises providing a plurality of frames defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.

- [c11] 11. A method of reporting T-wave alternan values, comprising:
obtaining T-wave alternan values corresponding to alternans at relative time intervals of a plurality of T-wave segments obtained from a physiological signal representative of a patient's heartbeat, the physiological signal being measured by a plurality of leads; and
displaying a representation of a plurality of the T-wave alternan values at the relative time intervals of the T-wave segments.
- [c12] 12. The method of claim 11 wherein displaying a representation of the T-wave alternan values comprises providing a plurality of frames for each lead defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.
- [c13] 13. The method of claim 12 wherein displaying a representation of the T-wave alternan values further comprises generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals for selected heart rates.
- [c14] 14. The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises generating a plot of the T-wave alternan values versus T-wave segment time.
- [c15] 15. The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

- [c16] 16. The method of claim 15 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.
- [c17] 17. The method of claim 15 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.
- [c18] 18. The method of claim 13 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.
- [c19] 19. The method of claim 18 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.
- [c20] 20. The method of claim 11, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.
- [c21] 21. A method of reporting T-wave alternan values, comprising:
identifying T-wave segments of a physiological signal having substantially repeating waveforms representative of a patient's heartbeat;
computing differences at relative time intervals of selected T-wave segments to provide preliminary alternan waveforms;
ascertaining a reference waveform from the preliminary alternan waveforms;

determining a final alternan waveform based on the preliminary alternan waveforms and the reference waveform, the final alternan waveform defining T-wave alternan values corresponding to alternans at relative time intervals in the T-wave segments; and
displaying a representation of a plurality of the T-wave alternan values at the relative time intervals of the T-wave segments.

[c22] 22. The method of claim 21 wherein displaying a representation of the T-wave alternan values comprises generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals for selected heart rates.

[c23] 23. The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises generating a plot of the T-wave alternan values versus T-wave segment time.

[c24] 24. The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c25] 25. The method of claim 24 wherein a highly contrasted color is assigned to measurements of T-wave alternan values that are categorized as being statistically insignificant.

[c26] 26. The method of claim 24 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c27] 27. The method of claim 22 wherein generating a graphic display related to the amplitude of the T-wave alternan values at the relative time intervals comprises (a) generating a plot of the T-wave alternan values versus T-wave segment time and (b) color coding relative amplitudes of T-wave alternan values and displaying colors corresponding to the relative amplitudes of the T-wave alternan values at the relative time intervals.

[c28] 28. The method of claim 27 wherein white is assigned to a T-wave alternan value having an amplitude less than a standard deviation for the T-wave alternan values.

[c29] 29. The method of claim 21, further comprising displaying a plot of a waveform indicative of a heartbeat associated with the T-wave alternan values.

[c30] 30. The method of claim 21 wherein the physiological signal is from a lead and displaying a representation of a plurality of the T-wave alternan values comprises providing a plurality of frames defined by time periods of a stress test, and wherein each frame has a graphical representation of the T-wave alternan values for a plurality of T-wave segments during the corresponding time period of the frame.